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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/500,575

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Shinya Kadono

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EXAMINER

ROBERTS, JESSICA M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,575	Applicant(s) KADONO ET AL.	
	Examiner JESSICA ROBERTS	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/31/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/31/2008 has been entered.

Status of Claims

1. Claims 27-30 are currently pending in Application 10/500,575. Claims 1-26 have been cancelled by Applicant's amendment filed on 10/31/2008.

Drawings

2. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim(s) 27-28 is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. For example the motion compensation method including the steps of "specifying", "deriving", "obtaining", "judging", "generating" to limit the steps to perform motion compensation method with an electronic device. Applicant has not provided

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sohm et al., US-7,260,148 in view of Information Technology-Coding of audio-visual-objects- Part 2: Visual ISO/IEC 14496-2 Second Edition 2001-12-01 (herein referenced as ISO-14496) in view of Tucker et al., US-5,903,313 in view of Frederiksen et al., US-5,272,529 and further in view of well known prior art (Official Notice).

7. Regarding **claim 27**, Sohm teaches A motion compensation method for generating a predictive image of a current macroblock included in a current picture with reference to a motion vector of an adjacent macroblock that is located adjacent to the current macroblock, the motion compensation method comprising: specifying plural adjacent macroblocks which are in the current macroblock and are already decoded (column 17 line 11-19 and Fig. 9); deriving a motion vector of a current block included in the current macroblock using plural motion vectors of the specified plural adjacent macroblocks (column 2 line 65-67 and fig. 4); specifying a co-located macroblock which is co-located with the current the current macroblock and included in a picture different

from the current picture including the current macroblock (fig. 4); obtaining a motion vector of a corner block located in a corner of the co-located macroblock (column 17 line 20-28 and fig. 9). Sohm does not explicitly disclose when a co-located block is composed of a plurality of blocks for which motion compensation has been performed, the co-located block, being co-located with the current block included in the current macroblock and being included in the co-located macroblock; wherein in the generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be "0", and the generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

8. However ISO' teaches co-located block is composed of a plurality of blocks for which motion compensation has been performed, the co-located block, being co-located with the current block included in the current macroblock and being included in the co-located macroblock (7.6.9.5.1 Formation of motion vectors for the direct mode).

9. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of ISO'14496-2 with Sohm for providing improved image coding.

10. Sohm (modified by ISO-14496-2) does not explicitly teach judging if a size of the obtained motion vector of the corner block is within a predetermined range; generating a

predictive image of the current block which is co-located with the co-located block, based on the result of the judging of whether the size of the obtained motion vector of the corner block is within the predetermined range.

11. However, Tucker teaches judging if a size of the obtained motion vector of the corner block is within a predetermined range; generating a predictive image of the current block which is co-located with the co-located block, based on the result of the judging of whether the size of the obtained motion vector of the corner block is within the predetermined range (The video processing system processes a compressed video data stream including a plurality of macroblocks of which some of the macroblocks have a motion vector associated therewith. The method includes the steps of selecting macroblocks in the compressed video data stream whose motion vector exhibit a magnitude greater than a predetermined threshold value. The remaining macroblocks whose motion vector or motion vectors do not exceed the threshold are not motion compensated, column 4 line 27-39, column 7 line 29-51, and fig. 3-4B.

12. Therefor, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Tucker with Sohm (modified by ISO'14496-2) for improved efficiency of motion compensation.

13. Sohm (modified by ISO'14496-2 and Tucker) is silent in regards to wherein in the generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be "0", and the generating is performed in such

a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

14. However, Frederiksen teaches generating of a predictive image of the current block, the generating is performed in such a manner that, if a size of the obtained motion vector is judged within the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be "0" (Frederiksen teaches where data entering the vector quantizer 21 first undergoes threshold based data reduction. Each incoming vector is compared to a threshold value which is set by the data flow controller 60 based on the output FIFO 64 occupancy. If the resultant difference is less than the threshold value, a zero vector value is inserted for the vector, column 7 line 45-50).

15. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Frederiksen with Sohm (modified by ISO'14496-2 and Tucker) for providing more efficient image processing.

16. Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) are silent in regards to generating is performed in such a manner that, if a size of the obtained motion vector of the corner block is judged beyond the predetermined range, the predictive image of the current block is generated by setting the motion vector of the current block to be the derived motion vector.

17. However, Official Notice is taken that both the concept and advantage of providing the limitations as claimed are notoriously well known and expected in the art,

and therefore, would have been obvious to incorporate in Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) for providing more efficient motion compensation.

18. Re claims 29, see the rejection and analysis for claim 27, except this is a method claim with the same limitations as claim 27.

19. Claims 28 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Sohm et al., US-7,260,148 in view of Information Technology-Coding of audio-visual-objects- Part 2:Visual ISO/IEC 14496-2 Second Edition 2001-12-01 (herein referenced as ISO-14496) in view of Tucker et al., US-5,903,313 in view of Frederiksen et al., US-5,272,529 in view of well known prior art (Official Notice) and further in view of Chang et al., US-6,483,876.

20. Regarding **claim 28**, Sohm (modified by ISO'14496-2, Tucker, and Frederiksen) as whole are silent in regards The motion compensation method according to claim 27, wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixel x 16 pixels, a size of the current block and the co-located block is 8 pixels x 8 pixels, and a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion compensation has been performed in 4 pixels x 4 pixels.

21. However, Chang teaches wherein a size of the current macroblock, the adjacent macroblock and the co-located macroblock is 16 pixel x 16 pixels, a size of the current block and the co-located block is 8 pixels x 8 pixels, and a size of each of the plurality of blocks which are included in the co-located macroblock and for which motion

compensation has been performed in 4 pixels x 4 pixels. (Fig. 2 illustrates one iteration of a conventional block-matching process. Current picture 220 is shown divided into blocks. Each block can be any size; however, in an MPEG device, for example, current picture 220 would typically be divided into blocks each consisting of 16.times. 16 -sized macroblocks, column 2 line 54-59).

22. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Chang for providing more efficient motion estimation.

23. Re claim 30, see the rejection and analysis for claim 28, except this is a method claim with the same limitations as claim 28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
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